CITY OF MOSCOW (PWS 2290023)
SOURCE WATER ASSESSMENT FINAL REPORT

September 27, 2001

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for City of Moscow, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Moscow drinking water system consists of five ground water sources. Although all of the wells are located within the Moscow Basin, Wells #2 and #3 draw water from the Basin's shallow aquifer known as the Wanapum Aquifer and Wells #6, #8 and #9 draw water from the deep aquifer known as the Grande Ronde Aquifer. Due to construction techniques, shallowness of the wells and proximity to numerous contaminant sources, Wells #2 and #3 have overall high susceptibility risk ratings for each of the four categories covered in this report. Those categories include inorganic contamination (IOC), volatile organic contamination (VOC), synthetic organic contamination (SOC) and microbial contamination. Well #2 or Well #3 is likely to be the source of trace levels of VOC that was detected in 1994 and 1995. The Wanapum aquifer is naturally high in the IOC contaminants iron and manganese, which the Moscow Water Department routinely removes from water drawn from that aquifer.

Wells #6, #8 and #9 have lower susceptibility scores compared to Wells #2 and #3. These deep aquifer wells are collared further away from potential contaminant sources and draw water from a cleaner source. Accordingly, Wells #6 and #9 have low risk rating for microbial contamination. On the other hand, Well #6 has a high risk for VOC contamination. Wells #8 and #9 are located the farthest out of the city limits and away from most contaminant sources. Well #8 is located in a farm field. Accordingly, Well #9 has the overall lowest risk rating scores of all the wells. Figure 1 showing the location of all five wells may be found on page 7. All other figures for this report may be found in Appendix A.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the City of Moscow, source water protection activities should focus on implementation of best management practices aimed at protecting the wellheads and surface seals within the zone immediate to the wells. Shallow Wells #2 and #3, located in the heart of Moscow, are particularly vulnerable to wellhead and ground water contamination. Urban and residential runoff should be monitored. Spills and accidents from businesses within the jurisdiction of the City should be closely monitored and dealt with. Some of the source water protection designated areas are outside the direct jurisdiction of the City of Moscow. Partnerships with state and local agencies and industry groups should be established and are critical to success. Disinfection practices should be maintained to reduce the risk of microbial contamination. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact the Lewiston Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR CITY OF MOSCOW, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is attached.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of Moscow wells are community wells that serve approximately 4,666 connections. The wells are located in and to the west of the City of Moscow (Figure 1). The public drinking water system for the City of Moscow is comprised of five wells.

In over 4,000 sampling events there have been only a few total coliform bacteria detections in composite water samples recorded since 1992. When re-sampled, total coliform was not found at any of the previously contaminated sample locations. These isolated microbial detections and two trace-level detections of VOC represent the only significant water chemistry problems that have been recorded in the public water system. The IOC nitrate was detected on one occasion for Wells #2 and #3, but at levels well below the Maximum Contaminant Level (MCL). No detections of SOC have been recorded for the system.

Defining the Zones of Contribution – Delineation

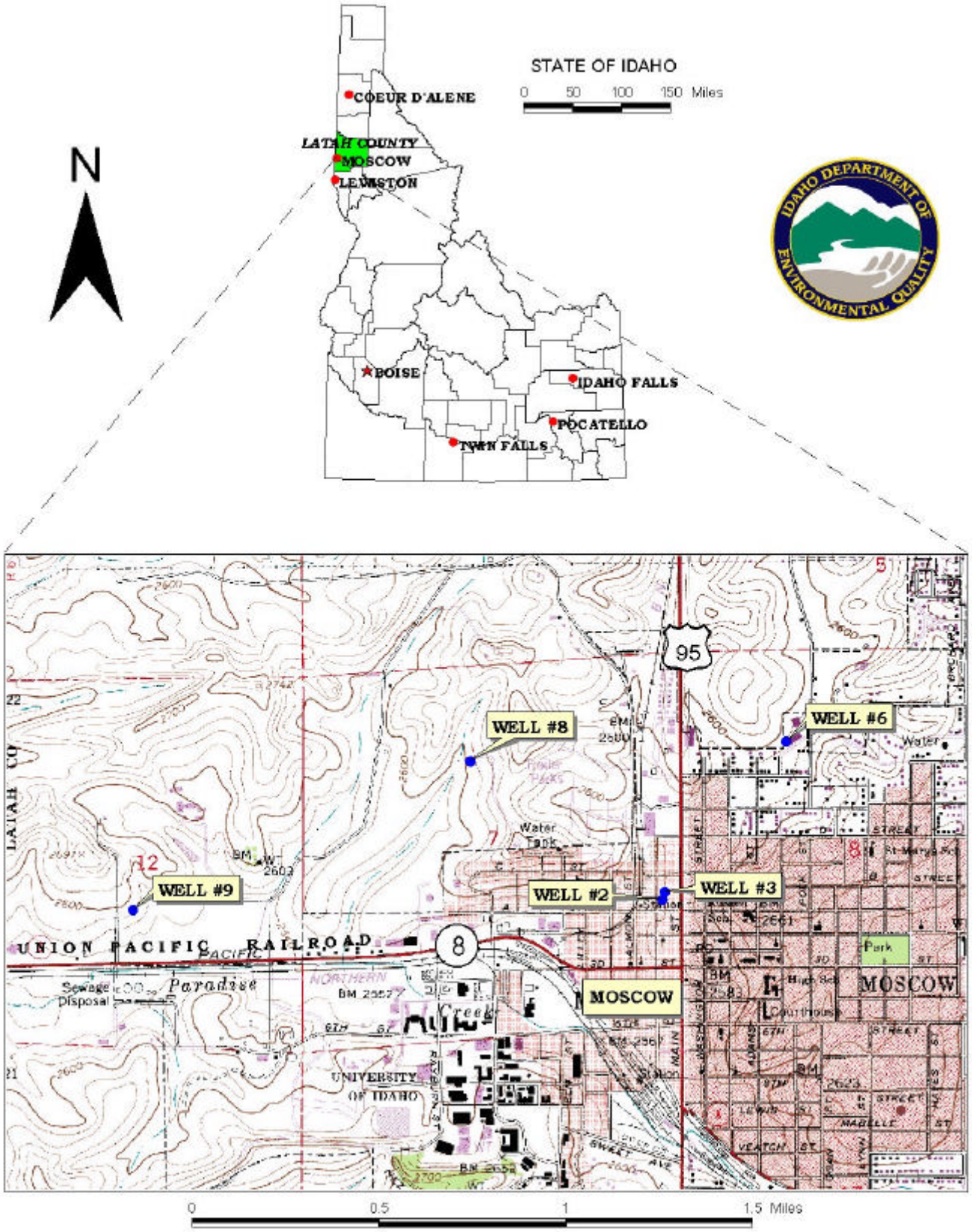
The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ used a refined computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the Columbia River Basalt aquifer in the vicinity of the City of Moscow. The computer model used site specific data, assimilated by DEQ from a variety of sources including the City of Moscow well logs, other local area well logs, and hydrogeologic reports summarized below.

All five wells if the City of Moscow system take their water from the fractured multi-aquifer system of the Moscow Basin of the Columbia River Basalt. More specifically Wells #2 and #3 intercept the upper Wanapum Aquifer directly beneath the City of Moscow and Wells #6, #8 and #9 intercept the deeper Grande Ronde Aquifer with delineation zones extending north and west of Moscow. Geologic formations associated with basalt of the Columbia Plateau are known to yield as much as several hundred gallons per minute (gpm) (IDWA, 1966). The Columbia River basalts are dense, exhibit columnar jointing in many places, and are folded and faulted leading to many fracture zones where ground water may collect. (Whitehead and Parliman, 1979). Basalt flows fracture at the surface as they cool. The fractures occur in the horizontal direction throughout the flow. Regional fractures hundreds or thousands of feet long may intersect several flows and have widely varying widths (Lum et al., 1990). The aquifer thickness ranges from 20 to 800 feet and the transmissivity ranges from 2,700 ft^2/day to 270,000 ft^2/day (Barker, 1979; Cohen and Ralston, 1980). Locally, the static water level is 55 to 90 feet below ground surface (bgs) for the shallow wells and 290 to 365 feet bgs for the deeper wells.

The delineated source water assessment areas for the City of Moscow's Wanapum Aquifer wells are located within 100 feet of one another. Both well's delineation zones can best be described as oval-shaped areas approximately 1 to 2 miles wide and up to 3 miles long extending north and south beneath and west of the City of Moscow (Figure 2, Appendix A). The delineated source water assessment areas for City of Moscow's Grande Ronde Aquifer wells can best be described as corridors extending

northeast (Well #6), North (Well #8) and to the west (Well #9). The delineation area for all three deep wells are depicted in Figures 4, 5 and 6 in Appendix A. The actual data used by DEQ in determining the source water assessment delineation areas are available upon request.

FIGURE 1. Geographic Location of the Moscow Water Department



Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

The dominant land use outside the City of Moscow area is rural subdivisions and irrigated/non-irrigated agricultural. Land use within the immediate area of the wellheads varies, but consists largely of residential subdivisions, urban and commercial uses, and service stations. Wells #2 and #3 each have in excess of 170 potential contaminant sites within their delineation areas (Table 2, Appendix B).

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination. These involve educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted from December 2000 to January 2001. The first phase involved identifying and documenting potential contaminant sources within the City of Moscow Source Water Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to validate the sources identified in phase one and to add any additional potential sources in the area.

Since the delineated source water protection areas for the deep wells encompass various portions of the City of Moscow and outlying rural area, those wells (Wells #6, #8 and #9) have varying amounts and types of potential contaminant sources. On the other hand, the two shallow wells (Wells #2 and #3) are located within 100 feet of one another within the heart of Moscow and have in excess of 170 identical potential contaminant sites (Table 2, Appendix B). The sources include a number of leaking underground storage tanks (LUSTs), underground storage tanks (USTs), service stations, automotive supply and automotive repair shops and other service business that are known to store or produce a variety of potential contaminants. Additionally, the delineation zones for Wells #2, #3 and #9 are crossed by Highway 95 and the Union Pacific Railroad. Both of these major transportation corridors are potential sources for all types of contaminants. Tables 2 through 5 in Appendix B list all of the contaminant sites, what time of travel zone each site is in and the type of contaminants each site could have present. Figures 2 through 6 in Appendix A show the locations of all of the potential contaminant sites and each well's delineation zones relative to the wellheads.

Section 3. Susceptibility Analyses

The water system's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristic, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

Hydrologic sensitivity is "moderate" for Wells #2 and #3 (Table 1, Page 11). This reflects the nature of the soils being in the poorly-drained to moderately-drained class, the vadose zone (zone from land surface to the water table) being made predominantly of fractured basalt, and the first ground water being located within 300 feet below ground surface (bgs). Additionally, Wells #2 and #3 do not have laterally extensive low permeability units that could retard downward movement of contaminants. Wells #6, #8 and #9 have a hydrologic sensitivity risk rating of "low" largely because ground water is greater than 300 feet bgs and there is an aquitard present above the Grande Ronde Aquifer.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. The City of Moscow drinking water system consists of five wells that extract ground water for residential, commercial, and industrial uses. The well system construction scores for Wells #2 and #3 score "high risk" largely because the wells were drilled in 1925 and 1930 respectively and there is limited data for these shallow wells. No determination could be made as to whether Wells #6, #8 and #9 are properly constructed to meet IDWR standards. But since the newest well (Well #9) was drilled in 1989 it is doubtful that any of the wells are in compliance with current standards. Though the wells may have been in compliance with standards when they were drilled, current PWS well construction standards are more stringent.

Well #2 is 560 feet deep and is cased to 240 feet. Well #3 is 569 feet deep and is also cased to 240 feet. Wells #2 and #3 have pumping levels of 73 feet and 90 feet respectfully. Well #6 is 1305 feet deep, #8 is 1458 feet deep and Well #9 is 1242 feet deep. These three deep wells have pumping levels of 392 feet, 392 feet and 312 feet respectfully.

Potential Contaminant Sources and Land Use

The only significant water contamination problems that have been recorded in the system are from occasional total coliform bacteria detections in various points of the distribution system, as well as from Well #2 in April 1993. The inorganic contaminants (IOCs) flouride and nitrate have been detected, but at levels well below the Maximum Contaminant Level (MCL). Only trace levels of volatile organic contaminants (VOCs) and no synthetic organic contaminants (SOCs) have been recorded.

Final Susceptibility Ranking

Due to construction techniques, shallowness of the wells and proximity to numerous contaminant sources, Wells #2 and #3 have overall high susceptibility risk ratings for each of the four categories covered in this report. Those categories include IOC, VOC, SOC and microbial contamination. Well #2 or Well #3 may be the source of trace levels of VOC that was detected in the distribution system during 1994 and 1995 (Table 1).

Wells #6, #8 and #9 have lower susceptibility scores compared to Wells #2 and #3. These deep aquifer wells are collared further away from potential contaminant sources and draw water from a cleaner source. Accordingly, Wells #6 and #9 have low risk rating for microbial contamination. On the other hand, Wells #6 has a high risk for VOC contamination. Wells #8 and #9 are located the farthest out of the city limits and away from most contaminant sources. Accordingly, Wells #8 and #9 have the overall lowest risk rating scores of all the wells (Table 1).

Table 1. Summary of City of Moscow Susceptibility Evaluation

Well	**Susceptibility Scores[1]**									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #2	M	H	H	H	H	H	H	H	H	H
Well #3	M	H	H	H	H	H	H	H	H	H
Well #6	L	H	H	H	L	L	M	H	M	L
Well #8	L	M	M	H	L	M	M	M	M	M
Well #9	L	M	M	H	L	L	M	M	M	L

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility,
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Susceptibility Summary

The only significant water contamination problems that have been recorded in the well water include the occasional total coliform bacteria detection in various points of the distribution system, as well as from Well #2 in April 1993. The IOCs fluoride and nitrate have been detected, but at levels well below the MCL. Trace detections of VOCs and no SOCs have been recorded. The Susceptibility Worksheets for each of the City of Moscow's five wells may be found in Appendix C of this report.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For the City of Moscow, source water protection activities should focus on implementation of practices aimed at protecting the area nearest the wells. The City of Moscow should also be diligent about local businesses that are regulated by the various environmental regulations (RCRA, CERCLA, SARA) or those with potential inorganic contaminants. Though water quality is generally good for the City of Moscow, the highly fractured nature of the Columbia River basalt could lead to cross-contamination from shallower fractures to deeper fractures depending on well construction. Any surface releases should be monitored closely to prevent contaminants from infiltrating to the ground water producing zones. Some of the designated source water protection areas are outside the direct jurisdiction of the City of Moscow. Partnerships with state and local agencies and industry groups should be established and are critical to success. Continued vigilance in keeping the well protected from surface flooding can also keep the potential for contamination reduced. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Boise Regional DEQ Office (208) 373-0550

State DEQ Office (208) 373-0502

Website: http://www2.state.id.us/deq

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at (208) 746142 for assistance with wellhead protection strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

Barker, R.A., 1979. Computer Simulation and Geohydrology of a Basalt Aquifer System in the Pullman-Moscow Basin, Washington and Idaho. U.S. Geological Survey Water-Supply Bulletin No. 48.

Cohen, P.L. and D.R. Ralston, 1980. Reconnaissance Study of the Russell Basalt Aquifer in the Lewiston Basin of Idaho and Washington. Idaho Water Resources Research Institute, University of Idaho, Moscow, Idaho, 165 p.

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Whitehead, R.L. and D.J. Parliman, 1979. A Proposed Ground Water Quality Monitoring Network for Idaho. U.S. Geological Survey (prepared in cooperation with Idaho Department of Health and Welfare, Division of Environment), Water Resources Investigations, Open-File Report 79-1477, 67 p.

Appendix A

Figures 2 – 5
City of Moscow
Source Water Assessment

Figure 2. Moscow Water Dept. Delineation Map and Pontential Contaminant Source Locations

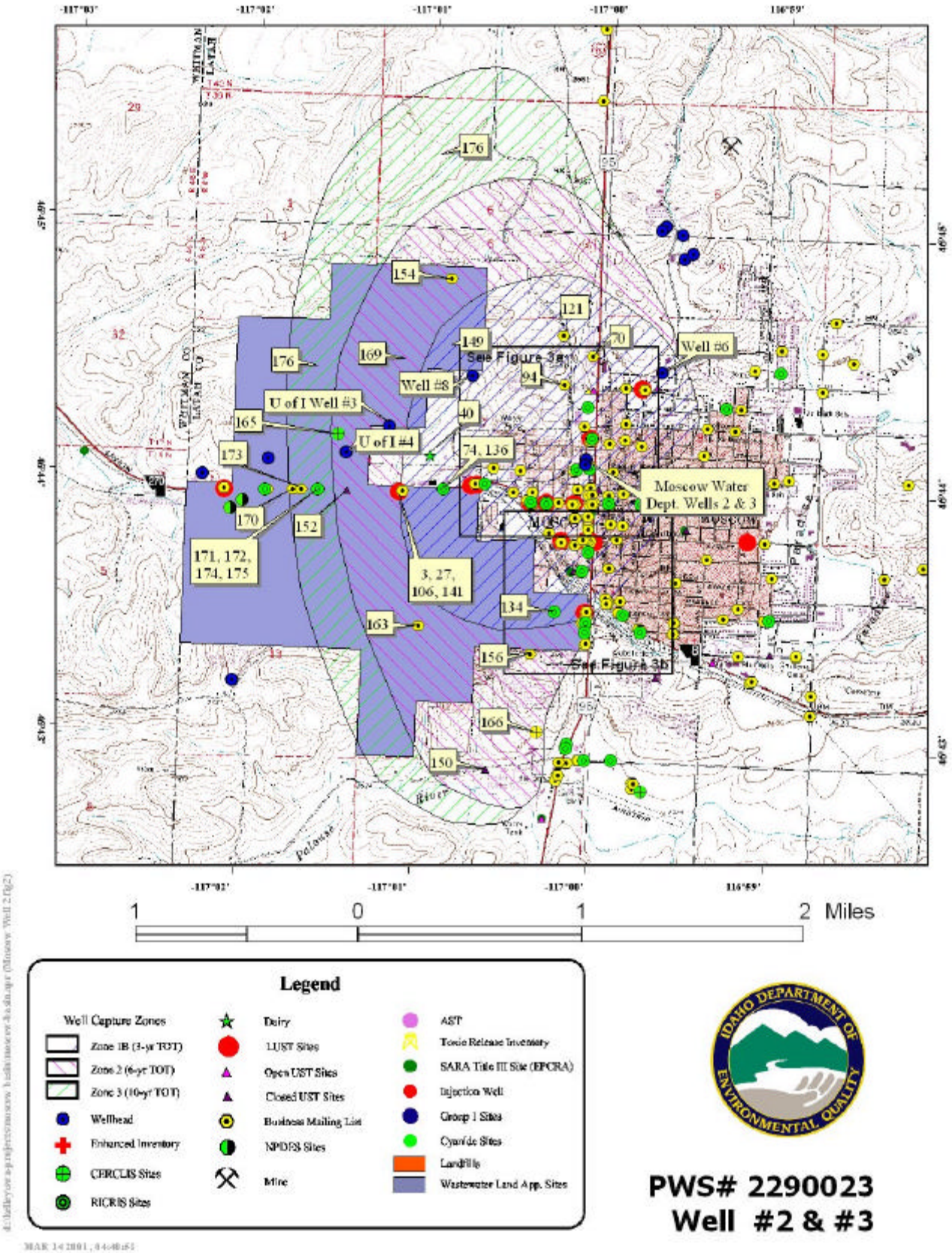


Figure 2a. Moscow Water Dept. Delineation Map and Pontential Contaminant Source Locations

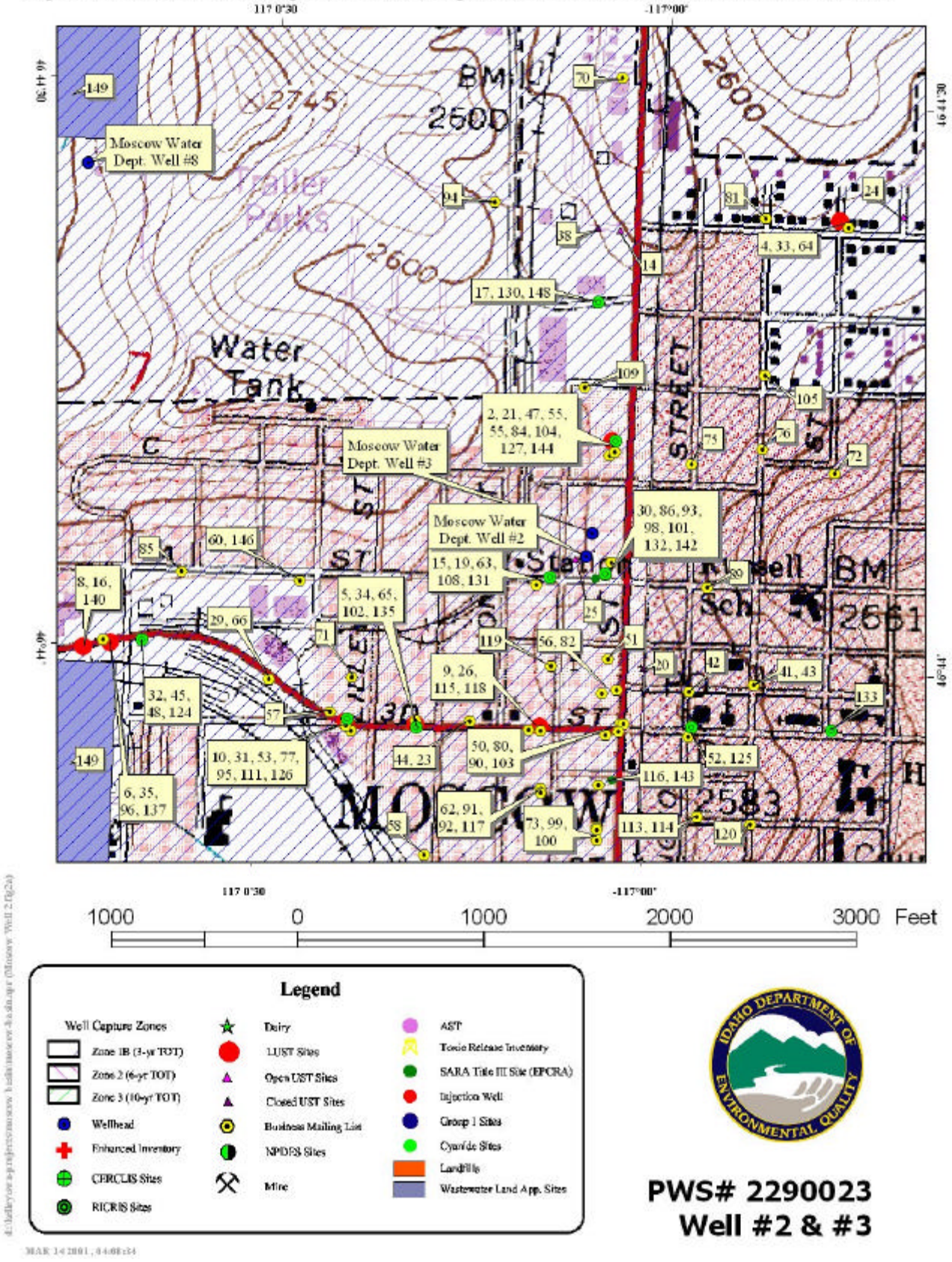
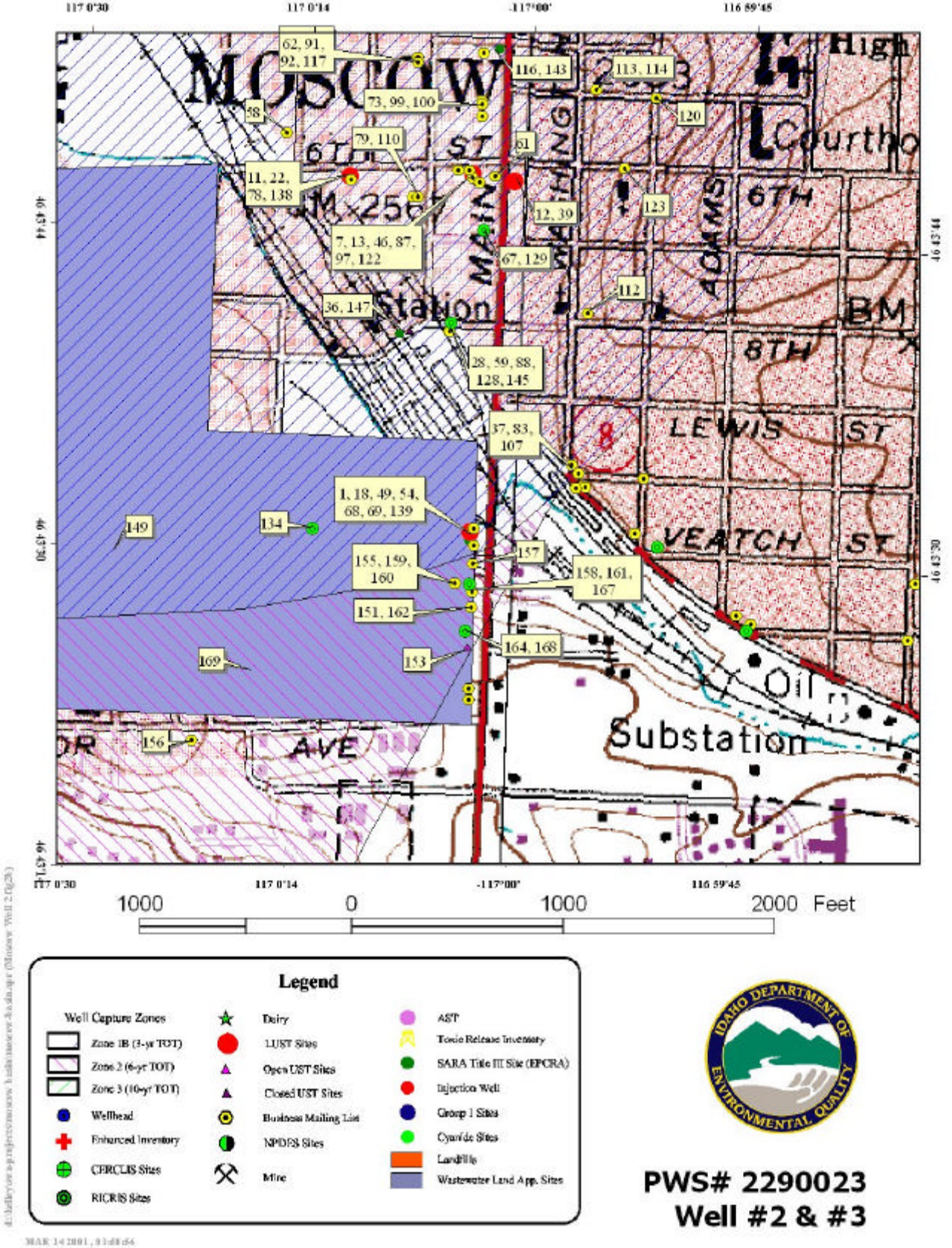


Figure 2b. Moscow Water Dept. Delineation Map and Pontential Contaminant Source Locations



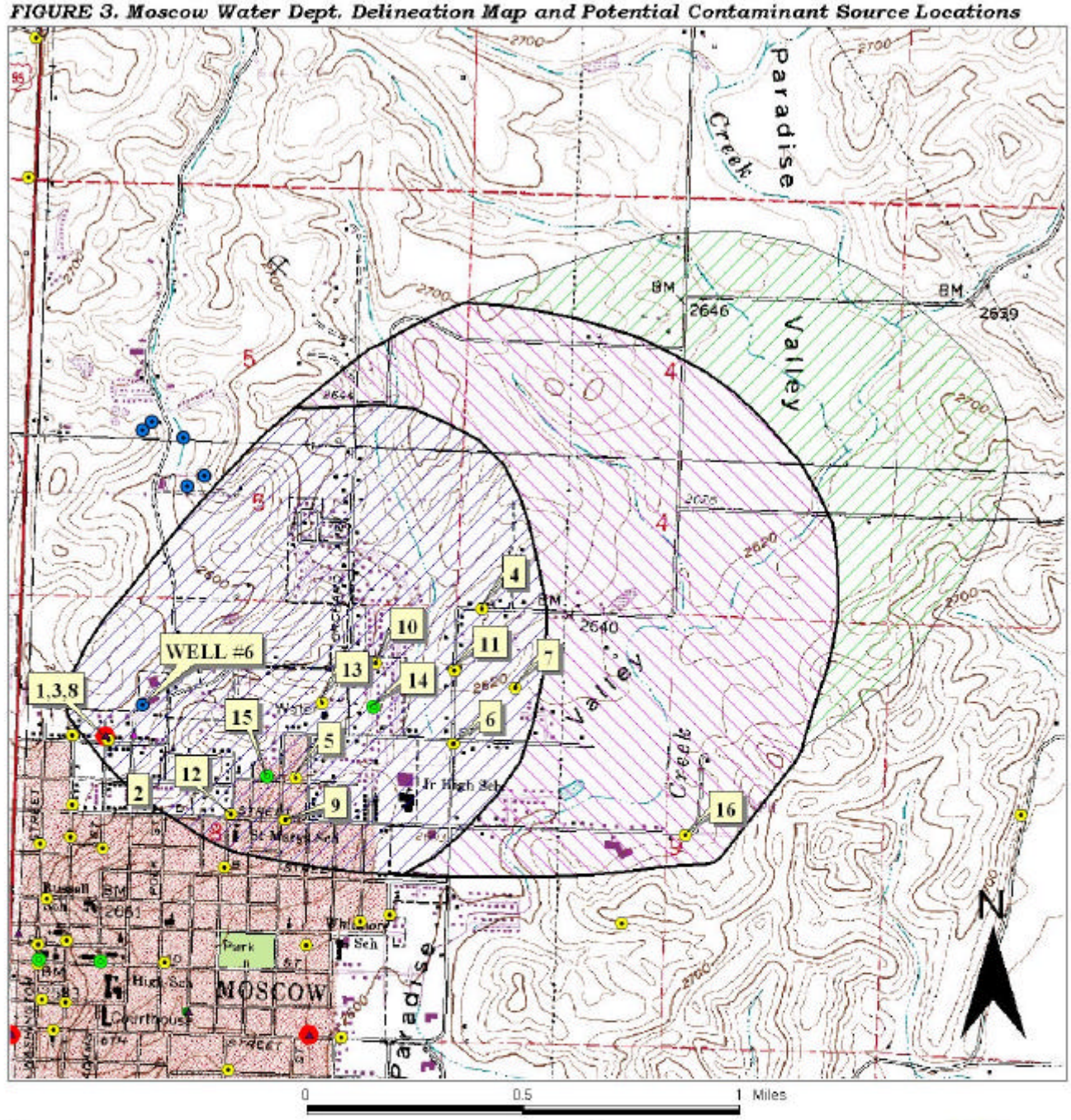
Legend

Well Capture Zones
- Zone 1B (1-yr TOT)
- Zone 2 (6-yr TOT)
- Zone 3 (10-yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Sites
- RICRIS Sites
- Dairy
- LUST Sites
- Open UST Sites
- Closed UST Sites
- Business Mailing List
- NPDES Sites
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Injection Well
- Group 1 Sites
- Cyanide Sites
- Landfills
- Wastewater Land App. Sites

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

PWS# 2290023
Well #2 & #3

FIGURE 3. Moscow Water Dept. Delineation Map and Potential Contaminant Source Locations



LEGEND

Time of Travel Zones
- 1 (1 yr TOT)
- 2 (5 yr TOT)
- 3 (10 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RCRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App.Site

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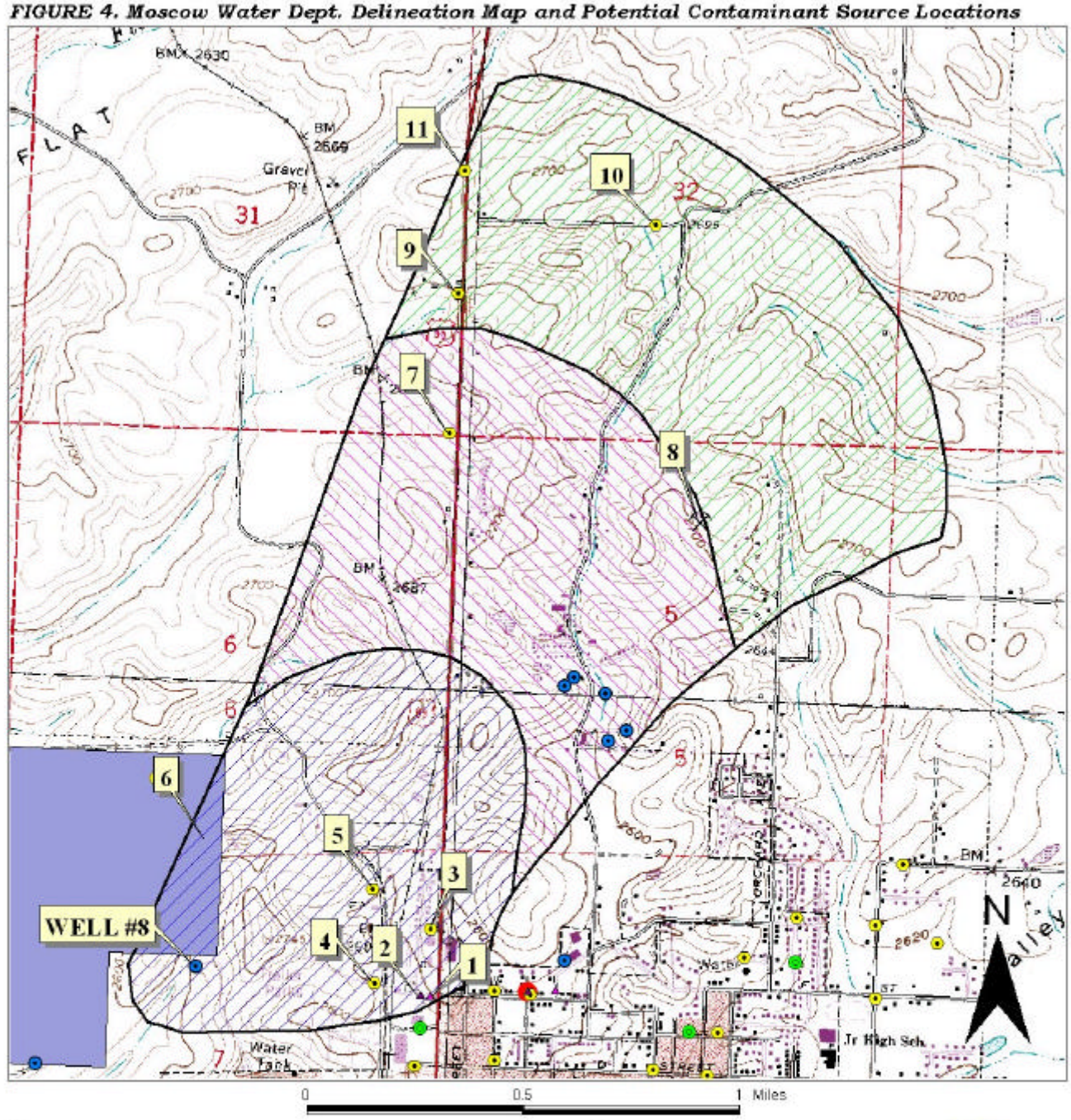
PWS# 2290023
WELL #6

FIGURE 4. Moscow Water Dept. Delineation Map and Potential Contaminant Source Locations



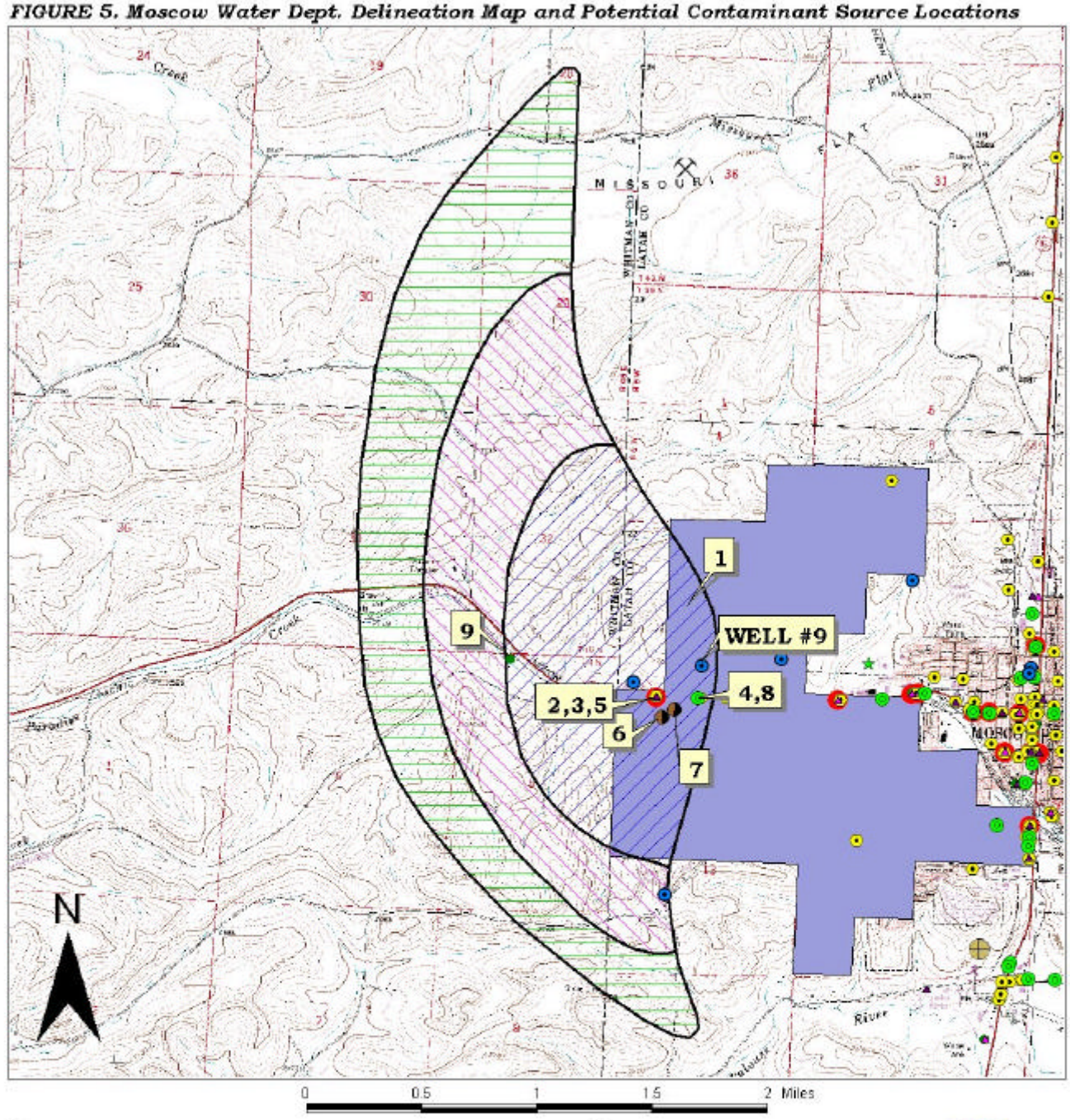
LEGEND

Time of Travel Zones
- 1 (3 yr TOT)
- 2 (6 yr TOT)
- 3 (10 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RCRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App.Site

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

PWS# 2290023
WELL #8

FIGURE 5. Moscow Water Dept. Delineation Map and Potential Contaminant Source Locations



PWS# 2290023
WELL #9

Appendix B

City of Moscow
Susceptibility Analysis
List of Potential Contaminants
Tables 2 - 5

Table 2. City of Moscow Wells #2 & #3, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	LUST	3	Database Search	IOC,VOC, M
2	LUST	3	Database Search	IOC,VOC, SOC
3	LUST	3	Database Search	IOC, VOC, SOC
4	LUST	3	Database Search	VOC, SOC
5	LUST	3	Database Search	IOC,VOC, SOC
6	LUST	3	Database Search	IOC, VOC, SOC
7	LUST	3	Database Search	IOC,VOC, SOC
8	LUST	3	Database Search	IOC,VOC, SOC
9	LUST	3	Database Search	IOC, VOC, SOC
10	LUST	3	Database Search	IOC,VOC, SOC
11	LUST	3	Database Search	IOC, SOC
12	LUST	3	Database Search	IOC, VOC, SOC
13	UST	3	Database Search	IOC,VOC, SOC
14	UST	3	Database Search	IOC,VOC, SOC
15	UST	3	Database Search	IOC, VOC, SOC
16	UST	3	Database Search	IOC,VOC, SOC
17	UST	3	Database Search	IOC,VOC, SOC
18	UST	3	Database Search	VOC, SOC,M
19	UST	3	Database Search	VOC, SOC
20	UST	3	Database Search	IOC,VOC, SOC
21	UST	3	Database Search	IOC, VOC, SOC
22	UST	3	Database Search	IOC,VOC, SOC
23	UST	3	Database Search	IOC,VOC, SOC
24	UST	3	Database Search	IOC, VOC, SOC
25	UST	3	Database Search	IOC, M
26	UST	3	Database Search	IOC,VOC, SOC
27	UST	3	Database Search	IOC, VOC, SOC
28	UST	3	Database Search	IOC,VOC, SOC
29	UST	3	Database Search	IOC,VOC, SOC
30	UST	3	Database Search	IOC, VOC, SOC
31	UST	3	Database Search	IOC,VOC, SOC
32	UST	3	Database Search	IOC,VOC, SOC
33	UST	3	Database Search	IOC, VOC, SOC
34	UST	3	Database Search	IOC,VOC, SOC
35	UST	3	Database Search	IOC,VOC, SOC
36	UST	3	Database Search	IOC, VOC, SOC
37	UST	3	Database Search	IOC, VOC, SOC
38	UST	3	Database Search	IOC,VOC, SOC
39	UST	3	Database Search	IOC,VOC, SOC
40	Dairy	3	Database Search	IOC, VOC, SOC

Table 2 (Continued). City of Moscow Wells #2 & #3, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
41	Fuel Supply	3	Database Search	IOC,VOC, SOC
42	Auto Shop	3	Database Search	IOC,VOC, SOC
43	Service Station	3	Database Search	IOC, VOC, SOC
44	Auto Dealer/Repair	3	Database Search	IOC, VOC
45	Auto parts	3	Database Search	IOC, SOC, SOC
46	Auto Dealer/Repair	3	Database Search	IOC, VOC, SOC
47	Veterinarian	3	Database Search	IOC, SOC, M
48	Auto Towing Service	3	Database Search	IOC,VOC, SOC
49	Tire and Auto Shop	3	Database Search	IOC, VOC, SOC
50	Photo Shop	3	Database Search	IOC,VOC
51	Winery	3	Database Search	IOC, VOC, M
52	Print Shop	3	Database Search	IOC, VOC
53	Veterinarian	3	Database Search	IOC, SOC, M
54	X-Ray Lab	3	Database Search	IOC, SOC, M
55	Sign Company	3	Database Search	IOC, VOC, SOC
56	Screen Print Shop	3	Database Search	IOC,VOC
57	Paint Shop	3	Database Search	IOC,VOC, SOC
58	Computer Company	3	Database Search	IOC, VOC, SOC
59	Farm Supply	3	Database Search	IOC, SOC
60	Farm Supply	3	Database Search	IOC, SOC
61	Sign Company	3	Database Search	IOC, VOC, SOC
62	Print Shop	3	Database Search	IOC,VOC
63	Seed Company	3	Database Search	IOC
64	Wrecker Service	3	Database Search	IOC, VOC, SOC
65	Sporting Goods	3	Database Search	IOC
66	Glass Tinter	3	Database Search	IOC,VOC, SOC
67	Cleaners	3	Database Search	IOC, VOC
68	Hospital	3	Database Search	IOC,VOC, SOC
69	Hospital	3	Database Search	IOC,VOC, SOC
70	Tractor Service	3	Database Search	IOC, VOC, SOC
71	Machine Shop	3	Database Search	IOC,VOC, SOC
72	Contractor	3	Database Search	IOC,VOC, SOC
73	Print Shop	3	Database Search	IOC, VOC, SOC
74	Auto Dealer	3	Database Search	IOC,VOC, SOC
75	Engine Repair	3	Database Search	IOC,VOC, SOC
76	General Contractor	3	Database Search	IOC, VOC, SOC
77	Veterinarian	3	Database Search	IOC, SOC, M
78	Grain Dealer	3	Database Search	IOC, SOC
79	Grain Dealer	3	Database Search	IOC, SOC
80	Trucking Company	3	Database Search	IOC, VOC, SOC

Table 2 (Continued). City of Moscow Wells #2 & #3, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
81	Furniture Upholster	3	Database Search	IOC,VOC, SOC
82	Auto Repair	3	Database Search	IOC,VOC, SOC
83	Carwash	3	Database Search	IOC, VOC, SOC
84	Veterinarian	3	Database Search	IOC, VOC
85	Furniture Upholster	3	Database Search	IOC, SOC, SOC
86	Auto body Repair	3	Database Search	IOC, VOC, SOC
87	Fire Department	3	Database Search	IOC, SOC, M
88	Food Processor	3	Database Search	IOC,VOC, SOC
89	Water Treatment Supply House	3	Database Search	IOC, VOC, SOC
90	Public Transit	3	Database Search	IOC,VOC
91	Recycling Center	3	Database Search	IOC, VOC, M
92	Recycling Center	3	Database Search	IOC, VOC
93	Auto Repair	3	Database Search	IOC, SOC, M
94	General Contractor	3	Database Search	IOC, SOC, M
95	Auto Dealer	3	Database Search	IOC, VOC, SOC
96	Sports Shop	3	Database Search	IOC,VOC
97	Bus Line	3	Database Search	IOC,VOC, SOC
98	Motor Cycle Shop	3	Database Search	IOC, VOC, SOC
99	Bicycle Shop	3	Database Search	IOC, SOC
100	Printer	3	Database Search	IOC, SOC
101	Auto Repair	3	Database Search	IOC, VOC, SOC
102	Engraver	3	Database Search	IOC,VOC
103	Garden/Farm Supplies	3	Database Search	IOC
104	Veterinarian	3	Database Search	IOC, VOC, SOC
105	General Contractor	3	Database Search	IOC
106	Auto Parts House	3	Database Search	IOC,VOC, SOC
107	Service Station	3	Database Search	IOC, VOC
108	Auto Parts House	3	Database Search	IOC,VOC, SOC
109	Lawn and Garden Supply	3	Database Search	IOC,VOC, SOC
110	Rental Shop	3	Database Search	IOC, VOC, SOC
111	Paint Shop	3	Database Search	IOC,VOC, SOC
112	Auto Repair	3	Database Search	IOC,VOC, SOC
113	Forestry Services	3	Database Search	IOC, VOC, SOC
114	National Security	3	Database Search	IOC,VOC, SOC
115	Service Station	3	Database Search	IOC,VOC, SOC
116	Electric Company	3	Database Search	IOC, VOC, SOC
117	Printer	3	Database Search	IOC, SOC, M
118	Auto Parts	3	Database Search	IOC, SOC
119	Tree Service	3	Database Search	IOC, SOC
120	Print Shop (Art)	3	Database Search	IOC, VOC, SOC

Table 2 (Continued). City of Moscow Wells #2 & #3, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
121	Excavating Contractors	3	Database Search	IOC,VOC, SOC
122	Auto Repair	3	Database Search	IOC,VOC, SOC
123	Auto Parts Supply	3	Database Search	IOC, VOC, SOC
124	Auto Dealer	3	Database Search	IOC, VOC, SOC
125	Hazardous Waste Site	3	Database Search	IOC, SOC, SOC
126	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
127	Hazardous Waste Site	3	Database Search	IOC, SOC, SOC
128	Hazardous Waste Site	3	Database Search	IOC,VOC, SOC
129	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
130	Hazardous Waste Site	3	Database Search	IOC,VOC, SOC
131	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
132	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
133	Hazardous Waste Site	3	Database Search	IOC, SOC, SOC
134	Hazardous Waste Site	3	Database Search	IOC, SOC, SOC
135	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
136	Hazardous Waste Site	3	Database Search	IOC,VOC, SOC
137	Hazardous Waste Site	3	Database Search	IOC,VOC, SOC
138	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
139	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
140	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
141	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
142	Hazardous Waste Site	3	Database Search	IOC,VOC, SOC
143	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
144	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
145	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
146	Hazardous Waste Site	3	Database Search	IOC,VOC, SOC
147	Hazardous Waste Site	3	Database Search	IOC, VOC, SOC
148	Hazardous Waste Site	3	Database Search	IOC,VOC, SOC
149	Wastewater land App Site	3	Database Search	IOC,VOC, SOC, M
150	UST	6	Database Search	IOC, VOC, SOC
151	UST	6	Database Search	IOC,VOC, SOC
152	UST	6	Database Search	IOC,VOC, SOC
153	UST	6	Database Search	IOC, VOC, SOC
154	Sheet Metal Fabrication	6	Database Search	IOC,VOC, SOC
155	Photo Shop	6	Database Search	IOC,VOC
156	Cabinet Shop	6	Database Search	VOC, SOC
157	Auto Dealer	6	Database Search	IOC, VOC, SOC
158	Metal Fabrication	6	Database Search	IOC, VOC, SOC
159	Bioresearch Lab	6	Database Search	IOC, VOC, SOC, M
160	Metal Fabrication	6	Database Search	IOC, VOC, SOC

Table 2 (Continued). City of Moscow Wells #2 & #3, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
161	Auto Repair	6	Database Search	IOC,VOC, SOC
162	Fuel Oil Supply	6	Database Search	IOC,VOC, SOC
163	Golf Course	6	Database Search	IOC, VOC, SOC
164	Forest Service	6	Database Search	IOC, VOC, SOC
165	Landfill	6	Database Search	IOC, VOC, SOC, M
166	Land fill	6	Database Search	IOC, VOC, SOC, M
167	Fuel Supplies	6	Database Search	IOC, VOC, SOC
168	Forest Service	6	Database Search	IOC,VOC, SOC
169	Wastewater Land App Site	6	Database Search	IOC, M
170	Dry Cleaners	10	Database Search	IOC,VOC
171	Laundry Shop	10	Database Search	VOC
172	Photo Shop	10	Database Search	IOC, VOC
173	Paint Shop	10	Database Search	IOC, VOC, SOC
174	National Security	10	Database Search	IOC, VOC, SOC
175	Laundry Shop	10	Database Search	VOC
176	Wastewater Land App Site	10	Database Search	IOC, M
177	Highway 95	10	Database Search	IOC,VOC, SOC, M
178	Union Pacific RR	10	Database Search	IOC, VOC, SOC, M

LUST = leaking underground storage tank, UST = underground storage tank,
SARA = Superfund Amendments and Reauthorization Act site
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 3. City of Moscow Well #6, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	LUST Site	3	Database Research	VOC, SOC
2	UST	3	Database Research	VOC, SOC
3	UST	3	Database Research	VOC, SOC
4	General Contractor	3	Database Research	IOC, VOC, SOC
5	Paint Shop	3	Database Research	IOC, VOC, SOC
6	Farm Supplies	3	Database Research	IOC, VOC, SOC
7	Logging Company	3	Database Research	VOC, SOC
8	Auto Repair Shop	3	Database Research	IOC, VOC, SOC
9	Rug Cleaner	3	Database Research	IOC, VOC
10	Janitorial Service	3	Database Research	IOC, VOC, SOC
11	Photo Shop	3	Database Research	IOC, VOC
12	General Contractor	3	Database Research	IOC, VOC, SOC
13	General Contractor	3	Database Research	IOC, VOC, SOC
14	River Supply Shop	3	Database Research	IOC, VOC
15	Paint Supply	3	Database Research	IOC, VOC, SOC
16	Taxidermy Shop	6	Database Research	IOC, VOC, SOC, M

LUST = leaking underground storage tank, UST = underground storage tank,
SARA = Superfund Amendments and Reauthorization Act site

[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 4. City of Moscow Well #8, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	Service Station	3	Database Search	IOC, VOC, SOC
2	General Contractor	3	Database Search	IOC, VOC, SOC
3	Farm Equip. Supply & Maint.	3	Database Search	IOC, VOC, SOC
4	General Contractor	3	Database Search	IOC, VOC, SOC
5	Excavation Contractor	3	Database Search	IOC, VOC, SOC
6	Wastewater Land App. Site	3	Database Search	IOC, M
7	Excavation Contractor	6	Database Search	IOC, VOC, SOC
8	Mine Prospect	6	Database Search	IOC
9	Meat Packing Plant	10	Database Search	IOC, M
10	Building Contractor	10	Database Search	IOC, VOC, SOC
11	Machine Shop	10	Database Search	IOC, VOC, SOC

LUST = leaking underground storage tank, UST = underground storage tank,
SARA = Superfund Amendments and Reauthorization Act site
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 5. City of Moscow Well #9, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	LUST	3	Database Search	VOC, SOC
2	UST	3	Database Search	VOC, SOC
3	Confectionery Shop	3	Database Search	VOC, SOC
4	UST	3	Database Search	VOC, SOC
5	Wastewater Discharge Site	3	Database Search	IOC, VOC, SOC
6	Wastewater Discharge Site	3	Database Search	IOC, M
7	Photo Shop	3	Database Search	IOC,VOC
8	Farm Supply	3	Database Search	IOC, SOC
9	Wastewater Land App Site	3	Database Search	IOC, VOC, SOC, M
10	Wastewater Land App Site	6	Database Search	IOC, VOC, SOC, M

LUST = leaking underground storage tank, UST = underground storage tank, SARA = Superfund Amendments and Reauthorization Act site

[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Appendix C

City of Moscow Susceptibility Analysis Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report
MOSCOW WATER DEPT WELL #2 Public Water System Number 2290023 9/26/01 2:09:38 PM

1. System Construction			SCORE
Drill Date		1/1/1925	
Driller Log Available		YES	
Sanitary Survey (if yes, indicate date of last survey)		YES	1996
Well meets IDWR construction standards		NO	1
Wellhead and surface seal maintained		NO	1
Casing and annular seal extend to low permeability unit		NO	2
Highest production 100 feet below static water level		NO	1
Well located outside the 100 year flood plain		YES	0
	Total System Construction Score		5

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		4

3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	DRYLAND AGRICULTURE		1	1	1	1
Farm chemical use high		YES	0	2	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A		YES	NO	YES	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			1	3	3	1
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	1199	90	99	15
(Score = # Sources X 2) 8 Points Maximum			8	8	8	8
Sources of Class II or III leacheable contaminants or		YES	99	99	99	
4 Points Maximum			4	4	4	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Non-Irrigated Agricultural		2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B			14	14	14	10
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Land Use Zone II	Greater Than 50% Non-Irrigated Agricultural		1	1	1	
Potential Contaminant Source / Land Use Score - Zone II			4	4	4	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		YES	1	1	1	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of		NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III			2	2	2	0
Cumulative Potential Contaminant / Land Use Score			21	23	23	11
4. Final Susceptibility Source Score			13	14	14	13
5. Final Well Ranking			High	High	High	High

Ground Water Susceptibility Report
MOSCOW WATER DEPT WELL #3 Public Water System Number 2290023 9/26/01 2:09:38 PM

1. System Construction		SCORE				
Drill Date	1/1/30					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1996				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	NO	1				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	NO	1				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		5				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	YES	0				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		4				
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	URBAN/COMMERCIAL		2	2	2	2
Farm chemical use high	NO		0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES		YES	YES	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			2	2	2	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		99	90	99	15
(Score = # Sources X 2) 8 Points Maximum			8	8	8	8
Sources of Class II or III leacheable contaminants or	YES		99	99	99	
4 Points Maximum			4	4	4	
Zone 1B contains or intercepts a Group 1 Area	NO		0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land		0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B			12	12	12	8
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES		2	2	2	
Sources of Class II or III leacheable contaminants or	YES		1	1	1	
Land Use Zone II	Greater Than 50% Non-Irrigated Agricultural		1	1	1	
Potential Contaminant Source / Land Use Score - Zone II			4	4	4	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES		1	1	1	
Sources of Class II or III leacheable contaminants or	YES		1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	NO		0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III			2	2	2	0
Cumulative Potential Contaminant / Land Use Score			20	20	20	10
4. Final Susceptibility Source Score			13	13	13	13
5. Final Well Ranking			High	High	High	High

Ground Water Susceptibility Report
MOSCOW WATER DEPT WELL #6 Public Water System Number 2290023 9/26/01 2:09:38 PM

1. System Construction		SCORE				
Drill Date	12/20/55					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1996				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	NO	1				
Casing and annular seal extend to low permeability unit	YES	0				
Highest production 100 feet below static water level	YES	0				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		2				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	YES	0				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	YES	0				
Total Hydrologic Score		2				
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	URBAN/COMMERCIAL		2	2	2	2
Farm chemical use high	NO		0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES		NO	YES	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			2	2	2	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		10	14	12	0
(Score = # Sources X 2) 8 Points Maximum			8	8	8	0
Sources of Class II or III leacheable contaminants or	YES		0	14	12	
4 Points Maximum			0	4	4	
Zone 1B contains or intercepts a Group 1 Area	NO		0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land		0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B			8	12	12	0
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES		2	2	2	
Sources of Class II or III leacheable contaminants or	YES		0	1	0	
Land Use Zone II			0	0	0	
Potential Contaminant Source / Land Use Score - Zone II			2	3	2	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	NO		0	0	0	
Sources of Class II or III leacheable contaminants or	NO		0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO		0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III			0	0	0	0
Cumulative Potential Contaminant / Land Use Score			12	17	16	2
4. Final Susceptibility Source Score			6	7	7	5
5. Final Well Ranking			Moderate	High	Moderate	Low

Ground Water Susceptibility Report
MOSCOW WATER DEPT WELL #8 Public Water System Number 2290023 9/26/01 2:09:38 PM

1. System Construction		SCORE				
Drill Date	12/31/64					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1996				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	NO	1				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	YES	0				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		4				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	YES	0				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	YES	0				
Aquitard present with > 50 feet cumulative thickness	YES	0				
Total Hydrologic Score		1				
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score	
Land Use Zone 1A	DRYLAND AGRICULTURE	1	1	1	1	
Farm chemical use high	YES	0	2	2		
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	YES	NO	NO	
Total Potential Contaminant Source/Land Use Score - Zone 1A		1	3	3	1	
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES	6	5	5	1	
(Score = # Sources X 2) 8 Points Maximum		8	8	8	2	
Sources of Class II or III leacheable contaminants or	NO	0	0	0		
4 Points Maximum		0	0	0		
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0	
Land use Zone 1B	25 to 50% Non-Irrigated Agricultural Land	1	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone 1B		9	9	9	3	
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES	2	2	2		
Sources of Class II or III leacheable contaminants or	NO	0	0	0		
Land Use Zone II	Less than 25% Agricultural Land	0	0	0		
Potential Contaminant Source / Land Use Score - Zone II		2	2	2	0	
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES	1	1	1		
Sources of Class II or III leacheable contaminants or	NO	0	0	0		
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1		
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0	
Cumulative Potential Contaminant / Land Use Score		14	16	16	4	
4. Final Susceptibility Source Score		8	8	8	7	
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate	

Ground Water Susceptibility Report
MOSCOW WATER DEPT WELL #9 Public Water System Number 2290023 9/26/01 2:09:38 PM

1. System Construction			SCORE			
Drill Date		1/12/89				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	1989			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		NO	1			
Casing and annular seal extend to low permeability unit		YES	0			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		2			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		YES	0			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		YES	0			
Aquitard present with > 50 feet cumulative thickness		YES	0			
	Total Hydrologic Score		1			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT		0	0	0	0
Farm chemical use high		YES	0	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A		NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	2	0
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	5	6	6	2
(Score = # Sources X 2) 8 Points Maximum			8	8	8	4
Sources of Class II or III leacheable contaminants or		YES	3	3	3	
4 Points Maximum			3	3	3	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land		0	0	0	0
	Total Potential Contaminant Source / Land Use Score - Zone 1B		11	11	11	4
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land		0	0	0	
	Potential Contaminant Source / Land Use Score - Zone II		2	2	2	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		NO	0	0	0	
Sources of Class II or III leacheable contaminants or		NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of		NO	0	0	0	
	Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0
Cumulative Potential Contaminant / Land Use Score			13	13	15	4
4. Final Susceptibility Source Score			6	6	6	5
5. Final Well Ranking			Moderate	Moderate	Moderate	Low